Papers and Reports

Creativity and mental illness

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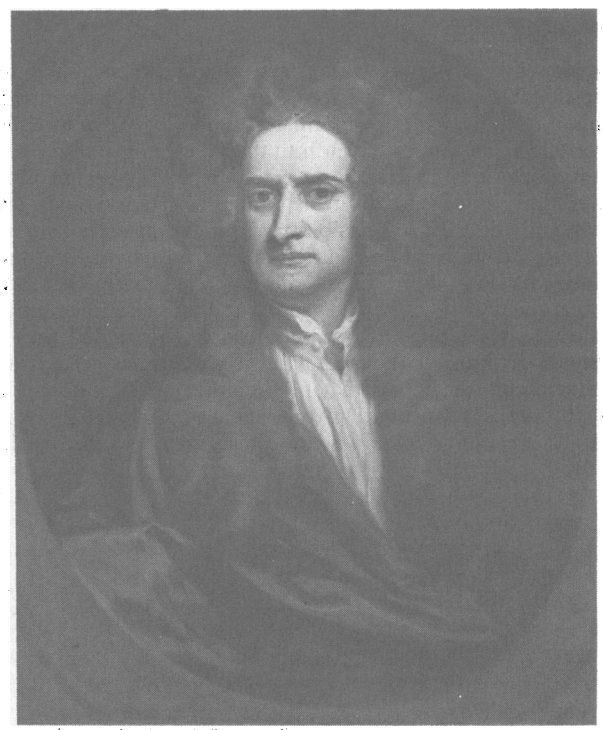
In comparing genius to a pearl Lombroso summarised his belief that the cause of genius was a constitutional defect, a defect that commonly showed itself as insanity in the genius or his family.[1] This "insanity" theory was supported by several later studies,[2-4] but other studies supported an alternative theory (the "stud" theory) that genius represented the highest capacities of the race—a culminating point of evolution—and that insanity was no commoner in geniuses or their families than in other people.[5,6] Reviewing the evidence in 1948, Brain concluded that though geniuses were probably not specially prone to insanity they were certainly more "nervous," and that when insanity occurred the commonest kind was "cyclothymia, the manic-depressive state."[7]



Portrait of Sir Isaac Newton by Geoffrey Kneller (by permission of the National Portrait Gallery).

The modern approach

Now if (as may reasonably be held[8]) the continuance of modern civilisation depends on a flow of original ideas then the nature and causes of genius and the prospect of fostering it are very important subjects of study. Growing awareness of this may account for an increasingly scientific approach to the problem during the past 40 years. In the modern approach "genius" and "insanity" have been replaced by the broader terms creativity (or simply high achievement) and mental illness. This has the important effect of widening discourse and so permitting the study of contemporary samples and their comparison with controls. It also avoids a difficulty that has only recently become clear: the facts about the geniuses of history are hard to establish because, by a process of myth making idealisation, "the genius becomes the victim of his chroniclers' fantasy."[9]

Controlled studies have shown almost without exception that among those who display creative gifts or have distinguished themselves academically the incidence of mental illness is significantly higher than that among controls. Noreik and Odegard examined the rate of admission to mental hospital of 21 000 Norwegians who had had higher education.[10] The incidence of affective (that is, manic depressive) psychosis was significantly higher than that in the general population, and they concluded that for both sexes there was an excess of cyclothymes (that is, those predisposed to affective psychosis) among those selected for school ability. Karlsson in Iceland found that the rate of admission to mental hospitals of people who had been college graduates was six times that of the general population.[11] The results of an English study were in line with this,[12] and an American study found an excess of affective psychosis and cyclothymia in creative writers.[13] Family studies have shown an excess of both mental illness and high ability (or creativity) in the first degree relatives of able persons,[13-15] and a Danish adoption study suggests that the family association is genetic rather than environmental.[16]

Head of Albert Einstein by Jacob Epstein (by permission of the Tate Gallery).

Mental disorders

The controlled studies clearly support the view that able or creative people and their near relatives have a high incidence of affective disorder (that is, affective psychosis or cyclothymia). For schizophrenia the conclusion is less clear because the diagnosis of schizophrenia has been uncertain. But genius may occur in appreciably introverted persons—Newton, for instance[17]—and Einstein, Bertrand Russell, and James Joyce are all said to have had near relatives with schizophrenia. One controlled study found an excess of schizothymic traits in the group of able people represented by research scientists.[18] Psychological tests have shown a similarity

between the mode of thinking in schizophrenia and in creative people[19 20]; but other studies suggest that the "widening of attention" that was once thought to be a peculiarity of schizophrenic thought also occurs in a proportion of normal people.[21 22]

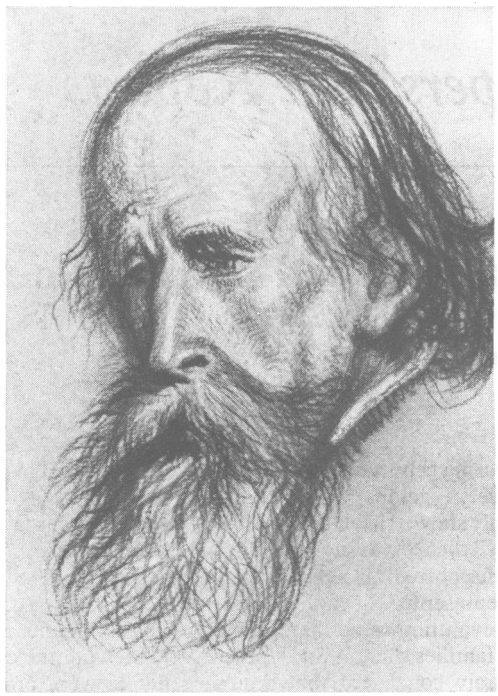
Whereas painters with schizophrenia are common and the illness doesn't necessarily harm their artistic development (Richard Dadd, for example), the reverse is true for composers[23] and probably also for writers—Andreason observed that although Joyce himself didn't become schizophrenic, "his art did."[24] The effect of schizophrenia on these different abilities seems to be paralleled by aphasia,[25] but there is clear historical evidence that creativity is not usually damaged by affective psychosis[26-29]—Christopher Smart's most celebrated poem "was written with a key on the walls of his madhouse cell."[27]

Physical disorders

Mental illness is only one of several conditions found to be associated with high ability. Gout ("dominus morborum et morbus dominus") afflicted an extraordinary number of the most eminent Europeans from the seventeenth to the nineteenth century,[6 30] and recent controlled studies show a correlation between serum uric acid concentrations and such traits as "range of activity" and "drive" (though not "level of responsibility").[31] Orowan suggested that the high serum concentration of uric acid in man, consequent on the evolutionary loss of uricase in the higher primates, has been a stimulant of brain activity and growth and thus a cause of his rapid intellectual development.[32] Another disorder associated with high ability is myopia.[33-36] A recent large scale study of 12 year old American children found that high mathematical reasoning skill was strongly associated with myopia and also, though less strongly, with allergies, left handedness, and male sex.[37] To this catalogue

Sketch of Virginia Woolf by Francis Dodd (by permission of the National Portrait Gallery).

may be added autism,[36] torsion dystonia,[38] and perhaps phenylketonuria and retinoblastoma.[35 36] Thus a present day view of the relation between genius and insanity might be that insanity (principally affective psychosis) is only one of several disorders associated with increased intellectual ability. Would the ability be lost if the disorder was successfully treated or prevented? The question has been asked particularly of affective psychosis and lithium therapy, and the answer appears to be no.[39 40]



Sketch of Sir Leslie Stephen by William Rothenstein (by permission of the National Portrait Gallery).

Toxins and stimulant drugs

Brain function may be stimulated not only by hereditary disorders but by toxins and drugs, many of which will induce a toxic psychosis, thereby adding to the insanities of genius. It has long been supposed that tuberculosis may produce a stimulating toxin, as in the cases of Keats, R L Stevenson, and Francis Thompson[41]; and the same has been said of early general paralysis of the insane,[2] though this may reflect only its common association with cyclothymia—in Schumann and Nietzsche, for example.[28]

Many writers and some artists (but few scientists, it seems) have used drugs in their creative work. Alcohol has been the most notorious, though its use and abuse are specially associated with cyclothymia. There are famous instances of the use of opium (Coleridge, De Quincey, even Charlotte Brontë—her magical description of an opium excitement, in *Villette* chapter 39, was surely based on personal experience); also of hashish (Baudelaire, Gautier[42]), and perhaps of absinthe (Strindberg,[43] Van Gogh[44]) and cocaine (Joyce, Freud[45]). Lange-Eichbaum (p 123) referred to the psychopath's "hunger for stimulation"[2]; and before modern drugs opened new doors of perception such stimulus may have been sought in the consequences of ascetism:

> Deep in yon cave Honorius long did dwell
> In hope to merit Heaven by making earth a Hell.
> (Byron, *Childe Harold*)

Just as athletic prowess may be enhanced by drugs so may cerebral activity, though at the risk of eventual damage. Curiously, the commonest and most harmless of all stimulating drugs—the non-inebriating caffeine—is closely related in its chemical structure to uric acid.

The creative process

Undoubtedly the most important qualities of genius are high intelligence and a special aptitude (the latter may override the former, as in the case of Turner, who was almost illiterate). But modern studies have indicated that other qualities—persistence, adventurousness, intellectual courage—are also characteristic of creative people.[8] Creativity is commonly taken to be a three stage process[46]: the storing up of relevant information (Johnson's "mind

of large general powers"); mulling it over, more or less unconsciously (Gibbon's "solitude is the school of genius"); and flashes of insight, as novel coherencies enter consciousness ("eureka"). Brain noted that this rhythm is similar to that of cyclothymia,[7] but it also may be likened to the basic biological rhythm of conception, gestation, and birth (the word genius comes from *gignere*, to beget).

A parallel theory of genius emphasises its social origins. On this theory innovators are commonly people of ability who for genetic or social reasons are social oddities. Their sense of conflict with society drives them to express unorthodox ideas that society either rejects or will tolerate only if the innovator can be labelled deformed or diseased. The unconscious of mankind, said Lange-Eichbaum (p 133), "will never tolerate superiority unless it is accompanied by suffering"[2]; and Edmund Wilson, propounding this theory of "the wound and the bow," considered the concept of superior strength to be inseparable from disability.[47] In so far as this is true the belief in a relation between genius and insanity may be as much a social as a medical phenomenon.

The implications

What are the implications of the modern work on creativity? The association with affective disorder (especially in literature) suggests that the cyclothymic constitution may be a socially valuable trait, even though it is often accompanied by some psychopathy (Horace's "tetchy breed of bards"). The close link between cyclothymia and affective psychosis might then make us reconsider the eugenic advice that a person who has had affective psychosis probably ought not to have children.[48,49] Instead, it is a reasonable hope that we shall learn to prevent this psychosis, just as we have learnt in some degree to prevent the ill effects of gout and myopia without impairing the valuable associated effects on mental activity.

But the hope of "breeding for genius" receives little support. On the one hand, some of the greatest geniuses (Newton, for example) sprang from wholly undistinguished families and left undistinguished descendants or none at all. As Bacon (*Essays*, VII) put it, "the care of posterity is most in them that have no posterity." On the other hand, breeding for genius is going on all the time because of the strong tendency for able people, particularly those with similar gifts, to intermarry. Thus Thackeray's daughter married Leslie Stephen, the father of Virginia Woolf; Burne Jones's daughter was the mother of Angela Thirkell and an aunt of Kipling. Assortative mating also occurs for cyclothymia,[50] but in gifted families the relative contributions of genetics and environment cannot easily be distinguished.

How far the supply of original ideas depends on stimulant drugs is an open question. In sport the growing ban on such drugs has not noticeably lowered achievement, and this might suggest that the use of cerebral stimulants by creative people has not been of special importance. Nevertheless, as Lange-Eichbaum scathingly remarked, "well described scenes of intoxication bring fame."[2]

If the evocation of genius depended mainly on chance or on the predisposition to affective psychosis, gout, and myopia then it should be manifested at much the same rate over the centuries. But this has not been so—contrast, for England, the century 1450-1550 with the succeeding century.[51,52] The causes of such secular variation are not clear, but one reason may lie in the fact that creativity is not an unmixed blessing. Like new wine in old bottles, new ideas threaten to disrupt a society that is rigid or brittle, and they will then be discouraged and their originators suppressed as heretical or insane. Even in an open society creativity may be a cause for concern—for example, the concern now felt over the wisdom of permitting the application of new ideas in physics and biology. Panic of error is, of course, the death of progress, but the old belief (supported by modern evidence) that genius and madness are near allied serves as a useful reminder of the two edged nature of creativity.

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Other illustrations to this article appear on pages 1608 and 1627.

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